

BRIEF REPORT

Evaluating the Relationship between Rib Fractures and the Probability of Abdominal Trauma; a Brief Report

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Abstract

Introduction: Trauma is one of the most important causes of death in patients under 40 years of age and the third common cause of death regardless of age. Rib cage damages are one of the major reasons for death in the early minutes post-trauma. Therefore, the present study aimed to evaluate the frequency of intra-abdominal injury in the patients with rib fracture who were referred to emergency department. **Methods:** This cross-sectional study included 60 patients with rib fractures who were admitted to the emergency department of Poorsina Hospital, Rasht, Iran, from March 2011 to March 2012. A checklist was filled out for all the patients including age, sex, trauma mechanism, side and site of fracture, the number of broken ribs, the results of abdominal ultrasonography, the need for laparotomy and mortality. The collected data were classified based on descriptive statistics and analyzed using SPSS 16. **Results:** 60 patients with the mean age of 47.26 ± 13.71 years were admitted to the emergency department during this time (81.7% male). The most common mechanism of trauma was car accident [22(36.7%)]. Among these 60 patients, 71 rib fractures in 3 levels of chest (upper, middle, lower) were detected and 50 (83.3%) in the same area. Mean number of fractured ribs was 2.85 ± 2.2 (minimum: 1, maximum 10). In 3 (5%) patients, fracture was on both sides. The results of abdominal ultrasonography in 7 (11.7%) patients were positive. The number of fractured ribs ($p=0.017$) and the area of the fracture ($p=0.048$) showed a significant correlation with the presence of intra-abdominal free fluid. The fracture of more than 2 ribs directly correlated with the possibility of intra-abdominal hemorrhage ($p<0.0001$). **Conclusion:** Based on the results of this study, it seems that the number and area of the fractured ribs directly and significantly correlate with the probability of abdominal trauma based on the results of abdominal ultrasonography.

Key words: Abdominal injuries; rib fractures; wounds and injuries